

# Understanding Attitudes, Beliefs, and Information Seeking Regarding Hookah Smoking in Parents of College Students: An Exploratory Qualitative Pilot Study

Allison V Calvanese, Megan V Bingham, Mary P Martinasek PhD, and Bruce K Friesen PhD

**BACKGROUND:** Hookah smoking has become increasingly common among young adults in the United States. College students engage in hookah smoking due to the increased exposure and popularity of hookah bars surrounding college campuses. There is limited information on parental perceptions of college students' hookah smoking. **METHODS:** Forty-four telephone interviews were recorded and transcribed with parents of college students using a structured interview guide to explore perceptions, beliefs, behaviors, and information seeking regarding hookah smoking. The transcripts were coded and categorized using NVivo software, and emerging themes were uncovered. **RESULTS:** Parents were lacking in awareness and knowledge of hookah smoking and health consequences. They often equated hookah smoking with bong use from their own college experiences. Although negative effects were equated with cigarette smoking, some parents reported beneficial effects of hookah smoking. Some parents disapproved of their college students smoking hookah, whereas others felt it was important that they try new behaviors in moderation. The varying responses indicate that parents were not receiving consistent messages, if any, regarding hookah tobacco smoking. **CONCLUSIONS:** Informing parents of current novel risky behaviors such as hookah smoking is necessary as they are trusted sources of information for young adult children. Delivering information and educational messages to both students and their parents may be a worthy approach when developing campaigns to deter hookah smoking. There is a need to deter hookah smoking, as it remains a public health concern. *Key words:* hookah; water pipe smoking; parents; perception; prevention. [Respir Care 2015;60(7):959–966. © 2015 Daedalus Enterprises]

## Introduction

Hookah smoking is a cultural tradition that has been around for centuries, with origins primarily in the Middle East and India.<sup>1</sup> This practice involves smoking flavored tobacco using a water pipe and is primarily known in the

United States as hookah smoking. Hookah smoking has become a fast-growing social phenomenon experienced among young adults, with current smoking prevalence rates ranging from 10% to 20%.<sup>2-4</sup> According to the Florida Youth Tobacco Survey, the prevalence of current hookah use has been on the rise among high school students nearing graduation, with the highest prevalence rates of ever trying hookah noted in 2010 and 2013 at 8.2%.<sup>5</sup> Its relatively low cost, exotic appearance, and social novelty has increased its popularity among college students.<sup>3,6-9</sup>

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Ms Calvanese, Ms Bingham, and Dr Martinasek are affiliated with the Department of Health Sciences and Human Performance, College of Natural and Health Sciences, and Dr Friesen is affiliated with the College of Social Sciences, Mathematics and Education, University of Tampa, Tampa, Florida.

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Correspondence: Mary P Martinasek PhD, Department of Health Sciences and Human Performance, College of Natural and Health Sciences, University of Tampa, 401 West Kennedy Boulevard, Tampa, FL 33606. E-mail: [mmartinasek@ut.edu](mailto:mmartinasek@ut.edu).

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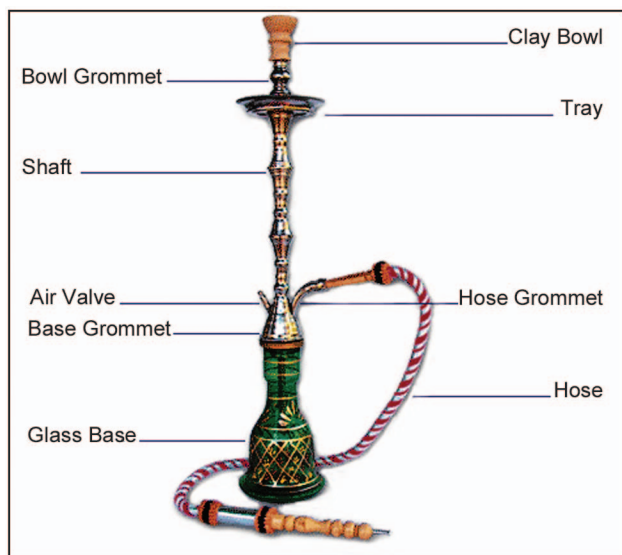


Fig. 1. Parts of a hookah.

A small bowl at the top of the device is filled with flavored tobacco, which is baked by placing a burning piece of charcoal on top of a piece of perforated aluminum foil covering the tobacco bowl. The smoker then inhales the tobacco smoke through a long hose that draws the smoke from the top of the device through the charcoal and tobacco and also through a bowl of water and ultimately into the lungs (Fig. 1). The smoker then exhales the smoke into the ambient air, creating secondhand and thirdhand smoke.

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SEE THE RELATED EDITORIAL ON PAGE 1078

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Hookah-smoking health risks are a public health concern.<sup>10</sup> Compared with cigarette smoking, hookah smoking has been found to introduce the potential risk of infectious disease transmission such as tuberculosis, chronic bronchitis, and herpes, as smokers repeatedly pass around and share one mouthpiece.<sup>11,12</sup>

Other negative health risks result from the burning charcoal. The charcoal emits high levels of carbon monoxide, and quantitative measurements of hookah patrons outside of hookah bars recorded levels as high as 58.2 ppm.<sup>13,14</sup> Heavy metals and carcinogens are prevalent in the secondhand smoke.<sup>10,15-17</sup> Because hookah smoking is a more continuous smoking process, a typical 45-min session involves inhaling a volume of smoke nearly 100–200 times that of a single cigarette, leading to increased carcinogen and nicotine exposure.<sup>18</sup> Other negative outcomes of hookah smoking include nicotine addiction, COPD, and cancers.<sup>19-21</sup>

### QUICK LOOK

#### Current knowledge

Hookah smoking has become increasingly common among young adults in the United States. College students engage in hookah smoking due to increased exposure and popularity of hookah bars surrounding college campuses. There is limited information on parental perceptions of college students' hookah smoking.

#### What this paper contributes to our knowledge

Informing parents of novel risky behaviors such as hookah smoking is an important approach to limit this practice. Capitalizing on information and educational messages to both students and parents should be considered when developing campaigns to deter hookah smoking. Programs to deter hookah smoking are needed, as it remains a public health concern.

Young adults are at significant risk for experimentation with novel behaviors often resulting from social pressures.<sup>22</sup> Parental influence has been found to have significant importance in preventing the onset of traditional cigarette smoking through adolescence.<sup>23</sup> Parents' approval or disapproval of cigarette smoking has been found to be a stronger determinant of adolescent smoking intention compared to peer normative behavior.<sup>24</sup> A high-quality parent-child relationship has been found to diminish the chances of adolescent hookah or cigarette smoking.<sup>25,26</sup> College students consider parents to be valuable sources of useful and believable information.<sup>14,27,28</sup> Communication on smoking-specific information between parents and their young adult children could play an effective role in deterring hookah smoking.<sup>29</sup> Adolescents are more likely to refrain from cigarette smoking if parents develop closer relationships, encourage open communication, and enact smoking restrictions.<sup>30-33</sup>

Understanding parental perceptions of hookah smoking is an important step toward informing future behavior-changing efforts aimed at college students. Because parents are viewed as a valued source of information by college students, it is important to understand the preferred avenues that parents receive information.<sup>34</sup> Focus groups conducted in 2010 by the Oregon Health Authority Tobacco Prevention and Education Program revealed that parents were unaware that hookah use was on the rise, knew little about its content and chemical additives, and were concerned about their children using this type of tobacco.<sup>35</sup> To the best of our knowledge, this is the only other qualitative study evaluating parental beliefs regarding hookah smoking. In addition, limited information is

known as to where parents seek information about hookah smoking.

This study aimed to understand parents' beliefs, behaviors, and attitudes regarding hookah tobacco smoking and where parents of college students seek relevant information about the health effects associated with hookah smoking. The research questions for this study were: (1) Do parents hold similar beliefs about hookah smoking as do college students? (2) Are parents of college students aware of the negative health effects of hookah smoking? (3) Do parents perceive that hookah is a lesser or greater threat than cigarette smoking? (4) How would parents feel if their son/daughter were to smoke hookah? (5) What advice would parents give their son/daughter if they wanted to smoke hookah? (6) How would parents search for information on hookah smoking if they chose to investigate it?

## Methods

### Recruitment of Parents

This was a cross-sectional, qualitative, exploratory study conducted with parents of college students at a private university in the Southeastern United States during the spring and summer semesters of 2012. Students in 2 classes were asked to interview one of their parents regarding their knowledge, beliefs, attitudes, and information-seeking behaviors related to hookah tobacco smoking. Interview data were collected on a convenience sample of 44 parents of students taking either public health or social science classes at the university. All parents were interviewed by telephone by their college-aged children. Students were given extra credit to voluntarily participate. This research study and interview guide were approved by the university's institutional review board.

### Procedures

Students at the university conducted telephone interviews with their parents in April and May of 2012. All students had classroom instruction on interviewing skills before conducting the telephone interviews and were provided with a structured interview guide. The guide referenced smoking tobacco using a hookah pipe. The interviews ranged from 15 to 20 min and were recorded using an iPhone application or digital recorder. All interviews were completed and submitted as an audio file to the principal investigator, de-identified, and stored on a password-protected computer. Demographic information was collected at the end of each interview. The interview guide and profile sheet are included in the appendix (see the supplementary materials at <http://www.rcjournal.com>).

### Data Coding and Analysis

The surveys were transcribed verbatim by one co-investigator into Microsoft Word documents (Microsoft, Redmond, Washington). The interviews were imported into the qualitative software NVivo 10 (QSR International, Burlington, Massachusetts). An a priori codebook was created and reviewed by the research team. Three coders sorted the data, which served to increase reliability of the codes and themes. One coder was the primary research investigator, one was the transcriber, and one was an external coder. The codebook was updated iteratively to discuss new codes and emerging themes.

## Results

### Demographics of Parents

The majority of parents were older than 46 y of age. There was a predominantly higher female response, with 28 (65%) female and 15 (35%) male parents. Thirty-three (78.6%) of the parents were white, 4 (9.5%) were African-American, 2 (4.8%) were Hispanic, 2 (4.5%) were Caribbean, and one (2.3%) was Native American. Most parents were born in the United States and were living on the East Coast, followed by the Southeast and Northeast Coasts. Thirty-four of the parents interviewed had never tried hookah smoking, whereas 10 had. This information is provided in Table 1.

### Research Questions

**(1) Do Parents Hold Similar Beliefs About Hookah Smoking as Do College Students?** Parents had varying responses about the purpose of hookah smoking. Hookah was identified mainly as a Middle Eastern custom. Twenty parents described hookah smoking as having a social context, and many parents provided a clear rationale that the only benefit of smoking is derived from the social phenomenon of smoking with a group of people. Six parents mentioned that smoking could improve their son/daughters' social skills and increase the level of social acceptance among peers. The social aspect is a common thread among college students, as well.

It's a Middle Eastern custom, and it found its way to the United States.—Female Nonsmoker

Maybe it's very big in the Middle East, it's inclusive, and it's social. If you didn't smoke, you may become socially isolated.—Female Nonsmoker

Despite informing the parents that the interview concerned tobacco smoking using a hookah, only 20 of the

Table 1. Demographics of Parents

Demographics	Sample (N = 44)
Sex, n (%) <sup>*</sup>	
Female	28 (65.1)
Male	15 (34.9)
Race/ethnicity, n (%) <sup>†</sup>	
White	33 (78.6)
Black	4 (9.5)
Hispanic	2 (4.8)
Indian	1 (2.3)
Caribbean	2 (4.5)
Age, n (%) <sup>†</sup>	
35–40 y	1 (2.4)
41–45 y	4 (9.5)
46–50 y	13 (30.9)
51–55 y	12 (28.6)
≥ 56 y	12 (28.6)
Residence, n (%) <sup>*</sup>	
Southeast	20 (46.5)
Northeast	11 (25.6)
Midwest	8 (18.6)
Caribbean	4 (9.3)
Birth origin, n (%) <sup>†</sup>	
United States	33 (78.6)
International	9 (21.4)
Smoking status, n (%)	
Has smoked hookah	10 (22.7)
Has not smoked hookah	34 (77.3)

<sup>\*</sup> One case of missing data, including 43 parent responses  
<sup>†</sup> Two cases of missing data, including 42 parent responses

parents specified that the substance smoked was a tobacco product, and 8 parents were uncertain whether hookah smoking involved tobacco, herbal shisha, or marijuana. Although many parents reported hookah as a social activity, 11 parents described hookah smoking as a drug or a pipe very closely related to a bong used to smoke marijuana. Seven parents shared concerns that hookah may incite their children to engage in illicit drug use or cigarette smoking.

Well it's a pipe, looks like a water pipe that is shared; it has a few hoses on it. Several people can smoke at once. They put tobacco in the thing and pass it around. It's shared smoking.—Male Smoker

Well to me, it's like a place where people come together to smoke out of a big large item that has water in the bottom, similar to a bong but not.—Male Nonsmoker

**(2) Are Parents of College Students Aware of the Negative Health Effects of Hookah Smoking? and (3) Do Parents Perceive That Hookah Is a Lesser or Greater**

**Threat Than Cigarette Smoking?** In general, it seemed that parents had explored little about hookah smoking and its effects on the body. Approximately half (21) of the parents discussed such negative repercussions as damage to the lungs or lung cancer as related to traditional cigarette smoking. Lung disease (including emphysema) was specifically mentioned by 3 parents, and COPD was mentioned by one parent. Eleven parents mentioned cancer in general, not specific to any part of the body, or that the user was exposed to carcinogens. Six parents reported damage to or cancer of the throat or mouth, with 2 of these parents stating these adverse health effects concurrently. Three parents mentioned heart disease or that smoking would cause a myocardial infarction. Parents of college students also believed that hookah may have long-term negative effects similar to cigarette smoking.

We all know the harmful effects of tobacco; carcinogens entering the body are cancer-causing chemicals.—Male Nonsmoker

Secondhand smoke was noted as a harmful effect of hookah smoking by 10 parents, 2 of whom declared that they believed that there was not as much secondhand smoke emitted from hookah smoking compared with cigarette smoking. Six parents mentioned the risk of infectious disease transmission from pipe sharing.

I think the same as smoking cigarettes, although you have the added thing of passing germs. You could end up with things like hepatitis, TB, and herpes through using the pipes.—Female Nonsmoker

I think it's bad for the person smoking it but not as bad for people around, not as much secondhand smoke.—Female Nonsmoker

Many parents were unsure of how the risks of cigarette and hookah smoking compared, and some noted that smoking any substance was harmful but did not declare that either form of smoking was more dangerous. Of the 29 parents who responded to this question, 19 parents felt that hookah smoking was equally as dangerous as smoking cigarettes. Many of these parents validated their opinion by conceding that any tobacco use is perceived as dangerous and that “tobacco is tobacco,” as 3 parents stated.

I believe the risks are all the same as inhaling any type of tobacco product. Tobacco is tobacco and when you're inhaling it, it still has the carcinogens so they are both [hookah and cigarettes] very dangerous.—Female Nonsmoker

The same risk maybe, being addiction and lung cancer, because you're introducing smoke into your

body, the same really for any type of smoking.—  
Female Nonsmoker

The second most common belief shared by 7 of the parents was that hookah smoking was a safer alternative to cigarette smoking, which is a common misperception among college students. Two of these parents mentioned that the tobacco was a mild grade or more natural than the tobacco in a cigarette, and 2 other parents believed that the filter of the water bowl of the hookah was used to filter out any toxicants before reaching the smoker. Parents also described the ease of access of smoking a cigarette referring to frequency of use and that hookah smoking is less convenient and therefore would not be done as often.

I don't know; maybe it's less toxic because of the process that it goes through. It's not as direct as a cigarette because it goes through a pipe and also through water.—Female Nonsmoker

Well, I think it's better than her smoking cigarettes, but I don't really want her to do it. I would have the same concerns about any tobacco use. I would hope she doesn't do it very often.—Male Smoker

Only 2 parents declared that hookah smoking was more harmful than cigarette smoking. Two parents mentioned that cigarettes contain a filter, unlike the hookah pipe, and that hookah sessions consist of continuous smoking over a much longer duration.

It doesn't have a filter. The only thing I can think of is where are all the tar, carbon monoxide, and the heavy metals and carcinogens going? At least with cigarettes, there is a filter. With hookah smokers, they are probably exposed to more carcinogens and carbon monoxide than your average smoker.—Female Nonsmoker

**(4): How Would Parents Feel if Their Son/Daughter Were to Smoke Hookah? and (5) What Advice Would Parents Give Their Son/Daughter If They Wanted to Smoke Hookah?** Almost all parents felt that hookah tobacco was like any other type of drug and would not approve of their college child using it regularly. Nineteen parents who had never smoked admitted that they would be disappointed if their child smoked hookah or stated that they do not condone smoking at all. Only 5 of these parents stated that they would not restrict their child if they would like to try it once.

Totally against it.—Female Nonsmoker

I wouldn't be really happy, but if it's something that they try in a social situation, as in a party or some-

thing, I would not be opposed to that.—Male Nonsmoker

As long as it's not all the time, I don't see any harm. I don't really know the facts or any scientific facts about it, but I don't think they'd do it continually.—Female Nonsmoker

I wouldn't overact if they tried it once or twice, but I wouldn't want them to go all the time and make a habit of it.—Female Nonsmoker

However, parents who previously smoked hookah were more accepting of their college student smoking hookah. All of the parents who smoked with the exception of one believed that it would be acceptable if their son/daughter smoked as long as it was not a regular occurrence.

I wouldn't want them to do it because it's not that good for you, but that's ultimately their decision.—Male Smoker

Just be gentle about it. I wouldn't object too much, especially once in a while. I'd much rather them not, but it is better than a pack of cigarettes every day.—Male Smoker

I'd just say everything in moderation. Try things; I don't think it's way too dangerous, but you can't do it a lot. Moderation.—Female Smoker

Several parents expressed a lack of control over their child's decision to engage in hookah smoking. Parents who did not state how they would feel if their son/daughter smoked mentioned that they were aware that they have smoked. Many parents expressed that informed decisions were good decisions for any behavior, and 3 parents stated that their children were wise enough to make the right decision not to smoke hookah.

They're out in the world now and have to deal with the consequences. I can only do the best I can and try to keep everything that's bad away from them and keep them safe, but people are going to do what they are going to do. I can just guide them.—Female Smoker

I wouldn't be very happy about it. I think they are knowledgeable about it and can make a good decision about something like that.—Male Nonsmoker

Many parents stated that smoking would be the start of a bad habit and misdirect their son/daughter to participate in other destructive behaviors. In particular, 14 parents expressed concerns regarding addiction, although some parents mentioned it as more or less addictive compared

with cigarette smoking or other drug use. A few parents were concerned that hookah smoking may result in experimentation with other drugs.

Many other things are addictive and can cause you trouble. I don't single one thing out and make it a big deal. It's just life, and we live it you know.—Male Smoker

Again, you don't know what is in each one, and we don't know, well I don't know, what the contents are, and it could lead to them wanting to smoke other types of things, like marijuana or other harmful drugs.—Female Nonsmoker

Well, I guess I'd feel the same way as if they did any other drug. People tend to follow each other; I would be disappointed if my children did that. People tend to move to other drugs; it introduces them to others.—Female Nonsmoker

**(6) How Would Parents Search for Information on Hookah Smoking If They Chose to Investigate It?** The parents felt that they did not know enough about hookah smoking to properly answer some of the interview questions, particularly regarding the general health effects of hookah smoking compared with cigarette smoking. Parents described hookah smoking as interesting and desired to learn more.

It's a very interesting topic. I did not know there was a big hookah thing going on. Hopefully, the young people won't look toward things like this.—Female Nonsmoker

I just again have very limited knowledge about it, but it does appear to be a very social thing with college-aged students from what I do know.—Male Nonsmoker

The parents described how they would obtain general health information regarding hookah smoking. For general health concerns, most parents would consult a medical doctor. However, when searching for information about hookah smoking, parents preferred Google ([www.google.com](http://www.google.com), Accessed February 10, 2015) as their first information source, with their general health practitioner as the second most frequently consulted source. The most commonly mentioned web site mentioned by parents was WebMD ([www.webmd.com](http://www.webmd.com), Accessed February 10, 2015). Other sites reported by one or more parents were the Mayo Clinic ([www.mayoclinic.org](http://www.mayoclinic.org)), American Lung Association ([www.lung.org](http://www.lung.org)), American Medical Association ([www.ama-assn.org/ama](http://www.ama-assn.org/ama)), and American Heart Association (<http://www.heart.org/HEARTORG>) (Accessed Feb-

ruary 10, 2015). Typical search terms included hookah and effects of hookah.

Well, I don't know how long hookah has been around, but probably the internet. You can find everything with Google.—Female Nonsmoker

## Discussion

Young adulthood (and college life, in particular) is a time of learning and experimentation, and this includes reaching out to friends and family for information. This pilot research study serves to help fill the gap in the literature on parental knowledge, attitudes, and perceptions regarding hookah smoking. Parents are respected and valuable sources of health information for college students.<sup>28</sup> Our findings demonstrate the need for parents to understand hookah smoking more fully to be a valid information source for their college children.

Parents have a limited sense of what hookah smoking entails, and they are uncertain about its safety. Parents are generally unaware of the health outcomes hookah smoking can elicit. These findings align with the data obtained by the Oregon Health Authority Tobacco Prevention and Education Program<sup>35</sup> and Varsano et al<sup>36</sup> that parents have similar misperceptions of safety related to hookah smoking. Raising parental understanding of dangers associated with hookah smoking may create a deterrent for their college-age children.

Parents expressed concern regarding their children smoking regularly, and some parents stated that they initially heard about hookah smoking from their college student. Only 10 parents identified their son/daughter as someone they personally knew who smoked hookah. Some parents stated that they were not aware of or did not know anyone who had smoked hookah, and 2 parents questioned whether their children had smoked. These findings indicate that fewer parents are aware of their children's smoking status compared with previous studies that involved United States and Israeli college students, approximately half of whom reported that their parents were unaware that they smoke hookah.<sup>37,38</sup>

A recurring theme was that parents did not want their college-age children to smoke hookah, consistent with the findings of Ahmed et al<sup>37</sup> that the majority (61%) of college students stated that their parents disapproved of hookah smoking. Although, in our study, the parents' attitudes were negative regarding their college-age children smoking hookah, the parents did not have adequate knowledge to provide advice. Additionally, no parent had discussed with their college student prior to the interview any concerns related to hookah smoking.

This risky behavior is partly due to the lack of educational information accessible to students and parents alike.

In a recent study by Maggi et al,<sup>27</sup> adolescents preferred educational messages about conventional cigarette smoking from their parents compared with an authoritative approach. Future studies could assess current college venues as sources to educate students about hookah smoking. Understanding where parents seek information can help guide future educational and social marketing campaigns regarding place and promotion. Doctors' offices and the internet were identified as important places that may serve as dissemination channels to reach parents. Furthermore, preventive strategies on how to communicate with and guide children regarding tobacco use or secondhand exposure are warranted.<sup>39</sup> From a public health perspective, educating communities of college students and their parents through newsletters and dormitory/university billboards may help to reach larger numbers of individuals. Social marketing is needed to use formative research to guide such behavior changes.

### Strengths and Limitations

This study has several strengths. First, we assessed parental attitudes, knowledge, beliefs, and information-seeking behaviors regarding hookah smoking, thereby adding to the body of knowledge in this important demographic. The parental responses exposed lack of awareness of and naive attitudes regarding their college students' behavior. Second, the use of multiple coders during data analysis improved the reliability of the codes and results. There are also several limitations. A small sample size (44 parents) limited to one private university in the Southeastern United States minimizes the transferability of the data. However, based on the data analysis, sufficient redundancy was reached. Another limitation is that the subjects were a convenience sample of parents of students in either public health or social science classes and were predominantly white, limiting data gathering from more diverse disciplines and ethnic backgrounds. Additionally, parents might have given expected parental responses and may not have divulged as much behavioral information to their college-age children. Social desirability may have impacted parent responses, as parents may have said what they thought seemed most appropriate to their child during the interview.

### Conclusions

Future research is needed with a larger and more diverse sample to explore misperceptions and information seeking among parents who have children attending other universities to explore similarities in attitudes and perceptions. Future studies should also assess the influence of parental attitudes on children's hookah-smoking behaviors and interventions to reach both parents and their children in an

attempt to raise awareness of the dangers associated with this practice

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